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There is no straightforward solution to the comparative measurement of demographic and socio-economic variables in international surveys. The paper will present the ESS approach, where the background variables have been developed by a centrally coordinated team of experts and afterwards clearly defined in a source questionnaire. The advantages and disadvantages of this approach are discussed. The paper ends with a closer look at the coding of Educational level in the ESS, and points out critical considerations for a successful harmonisation.

1 The European Social Survey

The European Social Survey (ESS) is an academically driven social survey with the central aim of developing and conducting a systematic study of changing values, attitudes, attributes and behaviour patterns within European polities. At the same time the ESS aims to raise the methodological standards to which cross-national research is carried out. The data collection is planned to be carried out every two years, by means of face-to-face interviews of about an hour in duration, followed by a short self-completion supplement. The questionnaire consists of a "core" module lasting for about half an hour, and will remain relatively constant form round to round. I addition there are two or three "rotating modules" repeated at intervals, each of which is devoted to a substantive topic or theme. The modules are selected following a Europe-wide competition. Thus, while the purpose of the rotating modules is to provide an in-depth focus on a series of particular academic or policy concerns, the core module aims instead to monitor change and continuity in a wide range of socio-economic, socio-political, socio-psychological and socio-demographic variables, and to provide background variables for the analysis of the rotating modules. (ESS Questionnaire Development Report *http://naticent02.uuhost.uk.uu.net/questionnaire/que_development_report.htm)*

The first data and documentation from ESS 2002/2003, is already freely available to social researchers in Europe and beyond from *http://ess.nsd.uib.no*. Data collection for the second round of the ESS will be staring in September 2004, and data will be available in September 2005.

1.2 The background of the European Social Survey

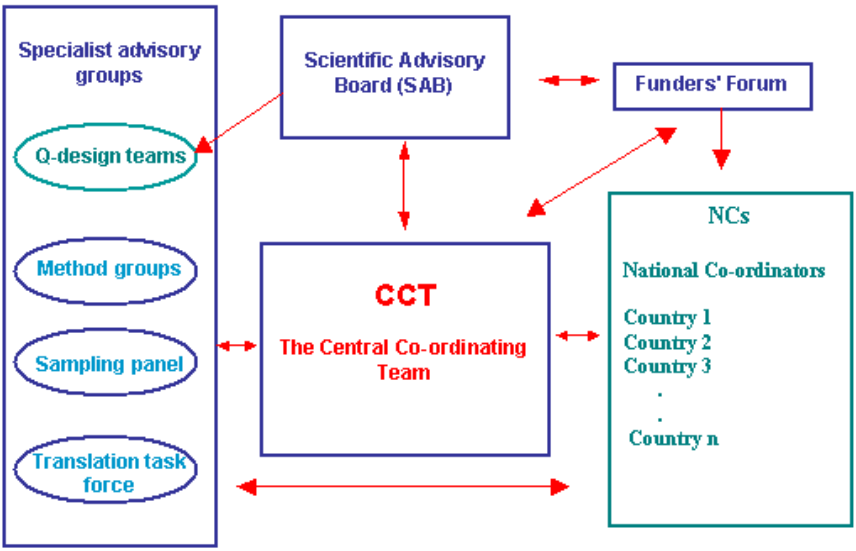
The idea for a European Social Survey originated from the experience in the collaborative comparative research project "Beliefs in Government" funded by the European Science Foundation (ESF) in the early Nineties (Kaase, 2003). The project work of "Beliefs in Government" made it apparent that there was little in terms of national survey evidence, which could meet the minimal criterion of at least functional equivalence across countries (ESF, 1999)

On the initiative of the Standing Committee of the Social Sciences (SCSS) of the ESF, an expert group (led by Max Kaase, one of the two co-directors of the Beliefs in Government project, and member of the SCSS) was set up to develop some criteria for an eventual ESS. Their work led to the SCSS creating a Steering Committee, composed of national representatives nominated by ESF member organisations, and a Methodology Committee with a group of experts to plan the survey in a most meticulous way. In 1999 the SCSS gave their approval green light to go ahead with the implementation of ESS (Kaase, 2003).

Not only is the ESS concept and methodology developed and planned over several years by leading scholars in their field, the funding structure of the ESS does also represent an innovation. In close collaboration with the "Research Directorate-General" of the European Union and ESF, a funding scheme was set up whereby the research councils of the ESF member organisations in the participating countries would cover the cost for the national surveys, and a Central Co-ordinating Team would be funded based on the competitive proposal for EU funding (Kaase, 2003). The central co-ordination of the ESS has so far, in competition with other research projects, been funded by the European Commission's Fifth Framework Programme for Round 1 (ESS, 2002/2003) and for Round 2 (ESS, 2004/2005), and by the Sixth Framework Programme for Round 3 (ESS, 2006).

Partly due to the financing structure and partly due to the aims of raising the methodological standards by which cross-national research is carried out, the organisational structure of the ESS has developed into a rather complex structure of a Central Co-ordinating Team (CCT) surrounded and supported by a number of expert groups and advisory bodies, see Figure 1 below.

Figure 1 Organisational Structure of the ESS



The funding of a Central Co-ordinating Team gives the ESS a rather unique opportunity to develop common methodological standards, make specifications, protocols, and in general guide and assist the participating countries thus enhancing the harmonisation and the comparability of the survey. The degree of standardisation and monitoring from the CCT is in fact one of the features that sets the ESS apart from other cross-national surveys (Bryson & O'Shea, 2003)

The organisational structure of the ESS does, however, not only reflect a top-down approach, but does clearly have bottom-up elements whereby questionnaire design groups and researchers from the participating countries can play a central role in designing the questionnaire and determining how the project develops (the Questionnaire design teams and the National co-ordinators, in green). The aim is that views and needs of those implementing the survey in each country (the national co-ordinators) can be taken into account when the centrally-designed protocols and questionnaires are drawn up. After all what the ESS (and other cross-national surveys) strive for is to balance the desired level

of comparability while at the same time being appropriately sensitive and responsive to cultural differences. At the same time, one of the major challenges for the ESS in building a time series is to ensure consistency and standardisation whilst ensuring the highest methodological standards (Bryson & O'Shea, 2003).

As already mentioned the centrally funded co-ordination of the ESS provides the CCT with ample opportunity to develop common standards and protocols. This top-down feature of the ESS does (in contrast to for example the ISSP) at least give the ESS the opportunity to apply input harmonisation of all variables, including background variables.

1.2 Development of the ESS core questionnaire

Even tough the development of the ESS core questionnaire is the responsibility of the CCT, it has none the less been constructed with help and guidance from advisory groups like the Scientific Advisory Board, National co-ordinators and other commentators. The design of the core questionnaire started early on when the former Steering and Methodology Committees determined their priorities for topics to be included within the core. Expert papers were commissioned to provide both a substantive overview of the concepts in each selected field and, where possible, a set of recommended questions that would successfully tap these concepts cross-nationally.

The questionnaire design process can be described in 6 stages:

Stage1
The first task was to ensure that the various concepts that were to be included (based on the expert papers) were actually represented as precisely as possible by the candidate questions and response scales.

Stage 2
To achieve the appropriate quality standard, the questions and scales, wherever possible, underwent an evaluation using standard quality criteria such as reliability and validity. These evaluations were carried out by Willem Saris and his colleagues, using the program SQP developed for the prediction of the reliability and validity of questions on the basis of more than 1000 questions evaluated by MTMM studies (Scherpenzeel & Saris, 1997; Saris et al., 2003). Attention was also given to other considerations such as scalability and internal consistency, comparability of items over time and space, expected item non-response, social desirability and other potential biases, and the avoidance of ambiguity, vagueness and double-barrelled questions.

Stage 3

The next step was the first translation from the source language (English) into one other language for the purpose of two large-scale national pilots. The translation panel, which is convened by Janet Harkness at ZUMA, guided this process to ensure optimal comparability between the two versions.

Stage 4

The fourth step was the two-nation pilot itself, which also contained a number of split-run experiments on question wording alternatives. Most of these experiments were in a drop-off self-completion supplement, but some were in the main interview questionnaire.

Stage 5

The pilot was analysed in detail to assess both the quality of the questions and the distribution of the substantive answers. Problematical questions, whether on grounds of weak reliability or validity, or because they turned out to produce deviant distributions or weak scales, were sent back to the drawing board.

Stage 6

The final step was the production of a fully-fledged 'source questionnaire', ready for translation from English into all ESS languages. The ESS aim was to apply a sequential Ask-the Same-Questions model – one in which the source questionnaire is finalised first and the translations produced. The English source questionnaire was annotated to aid the translation process. This annotation was carried out in collaboration with the various question authors and National co-ordinators in order to avoid ambiguities by providing definition and clarifications of the concept behind questions, especially where the words themselves were unlikely to have direct equivalents in other languages. Each participating country then carried out a small-scale pre-test to iron out any remaining translation or substantive issues.

(ESS Questionnaire Development Report, *http://naticent02.uuhost.uk.uu.net/questionnaire/que_development_report.htm)*

The result of the ESS questionnaire development is a carefully centrally designed questionnaire with valuable input and guidance from a number of advisory expert groups and researchers.

1.3 Background variables in the ESS

Although there is an increasing need for the comparative measurement of demographic and socio economic variables, no such comprehensive standards for social research exist at the European level (Wolf & Hoffmeyer-Zlotnik, 2003). No matter how attractive the idea, the ESS did hence not have the option of adopting an existing (and well tested) set of background measures.

The development of the background variables in the ESS did in fact arise from a similar process as the rest of the core questionnaire, the key specialist paper being written by the scholars Robert Erikson & Jan O. Jonsson. The resulting topics for the ESS demographic and socio-economic variables are listed below. For a complete list of the demographic and socio-economic variables in ESS Round 1, please see Appendix.

- Demography
- Family, household
- Education
- Employment, main activity
- Economic standing, income
- Heritage, identity, religion

The topics were transformed into constructs, questions and answer scales. However, it is beyond the scope of this paper to go into detail on how all these topics were transformed into constructs and questions. We have instead selected three variables, which we would like to use as examples of the kind of considerations that were undertaken by the CCT when deciding on how to measure the constructs.

Before we go into some detail on the selected variables: Occupation, Religion and Education we would like to make a more general comment on the use of international coding frames in the ESS.

1.4 The use of international standards for coding of background variables

Even tough there are no common set of measures for background variables, there are instruments for measurement of single variables that are established in internationally research (Wolf & Hoffmeyer-Zlotnik, 2003). Naturally the ESS would like to base the relevant background variables upon already existing and accredited standards. The post coding of variables like occupation, industry, language and country were hence decided to be coded into well accredited international standards like the ISCO-88 (com) for "Occupation", NACE rev1. for "Industry" and ISO 3166-1 and ISO 639-2 for the coding of country and language respectively. All established standards having been developed by, or in close cooperation with, international organisations such as the International Labour Office, the United Nations and Eurostat.

For other variables, like education and religion the decision was not so clear-cut as to whether the coding should be according to an existing standard or whether the ESS should develop their own coding scheme, or simply leave some of the variables country specific.

Occupation

Based on the expert papers as well as an investigation into the use of coding standards for occupation in other cross-national surveys (the International Social Survey Programme, the European Community Household Panel and others) it seemed quite evident that the International Standard Classification of Occupation, ISCO-88 would be the natural choice for the ESS. Not only could the standard coded at 4 digit level (with the addition of information on standing in employment) provide sufficient information to construct measures of both social class and occupational prestige, but the use of skill level as one of the "aggregation levels" in the standard does also provide the users with a direct indicator of labour market position. (Erikson & Jonssson, 1999).

Table 1 Occupation, ESS

Construct	Occupation
ESS Questions	• Verbatim recorded questions: • What is/was the name or title of your main job? (F21) • In your main job, what kind of work do/did you do most of the time? (F22) • What training or qualifications are/were needed for the job? (F23) • What does/did the firm/organisation you work/worked for mainly make or do? (F24) • Including yourself, about how many people are/were employed at the place where you usually work/worked? (F15)
Standard/coding frame	• ISCO88 (com) 4 digit
Harmonisation, comments	• Mainly input-harmonisation, but the participating countries could ask additional questions if further information was considered necessary for the coding of the standard.
Problems	• The knowledge and acquaintance with the ISCO-88 (com) coding framework varied between the countries. Some countries coded into their national standard for occupation and bridged that coding into ISCO-88 (com), others coded into the ISCO-88 ILO version of the standard and adapted the coding to ISCO-88 (com) afterwards. Others coded directly into the ISCO-88 (com) framework. • The different approaches to the coding can all yield different kind of errors, none of which are detectable for the ESS Archive after the coding is done. A common problem with post coded variables. The bridging from national standards to the ISCO8-8 (com) is not documented in the survey.

It was, however, decided by the CCT to use what can best be described as the European Union variant of the ISCO-88, namely the ISCO-88 (com). According to Eurostat, the ISCO-88 (com) should be used for EU purposes. The ISCO-88 (com) should not be regarded as a different classification from ISCO-88, but is the result of a coordinated effort by National Statistical Institutes to implement ISCO-88 for census and survey coding purposes within the European Union (Elias & Birch, 1994).

Religion

While it is relatively straightforward to apply international standards for the coding of labour market characteristics like occupation, it is a much greater challenge to find common denominators for the coding of variables for religion and education (Erikson & Jonsson, 1999).

The problems of finding a common measure for religion can undoubtedly be traced back to the differences in the historical developments of religious institutions across countries. Different colonial and immigration history leading to different religious minorities, different historical developments in the secular realm and the presence of state churches or not, all contribute to a very diverse religious landscape, even within Europe (Hoffmeyer-Zlotnik & Wolf, 2003).

Recognising the need for national expertise in this field, the CCT settled for a combination of input and output harmonisation for the religious variables in the ESS, see Table 2. Although the same question(s) were asked in all countries, the answer categories (denominations listed) should be set up by the national teams to best match the religious landscape of their country, and later re-coded into the common ESS coding frame.

Education

Educational systems differ markedly across countries. They have been formed by nation specific cultural and social concepts and traditions, and depend on national regulations and legislations (Hoffmeyer-Zlotnik & Wolf, 2003). In addition educational systems are also more often subject to change than occupations and economic activities. Hence, harmonising and comparing variables measuring different aspects of education is rather difficult. Not only does comparison and harmonisation require substantial knowledge on the various national structures, but ideally the changes over time should also be taken into consideration (Braun & Mohler, 2002).

There are some simple ways of identifying a common educational structure (such as primary, secondary tertiary levels etc.), but there has also been developed more ambitious coding schemes like the CASMIN schema developed by Walter Müller and associates (Müller & Shavit, 1998; in Erikson & Jonsson, 1999), and the UNESCO international standard classification of education (ISCED).

Table 2 Religion, ESS

Construct	Religion
ESS Questions	• Do you consider yourself as belonging to any particular religion or denomination? (C9) • Which one? (C10) Country specific answer categories.
Standard/coding frame	• ESS coding frame. 1 Roman Catholic 2 Protestant 3 Eastern Orthodox 4 Other Christian Denominations 5 Jewish 6 Islam 7 Eastern Religions (Buddhist, Hindu, Sikh, Shinto, Tao etc.) 8 Other Non-Christian Religions
Harmonisation, comments	• The same two questions were to be asked in all participating countries, but the answer categories were set up by the national teams to suit the needs of their country. The responses were then to be post-coded into a common ESS coding frame for religious denominations. • Elements of both input harmonisation (same question) and output harmonisation (different answer categories bridged to common standard)
Problems	• Ensuring that all the national answer categories was suited for bridging into the common ESS coding framework (exhaustive and mutually exclusive). • Differences in national structures of religious organisations (state church – no state church) • In some countries (with a state church) there is at least a potential risk of measuring membership, rather than affiliation.

After careful consideration the CCT settled for the use of a slightly modified ISCED 1997 coding frame for the coding of highest level of education in the ESS. The coding frame is listed in Table 3 below. The coding frame does only distinguish between the main levels of the ISCED 1997. The sub-level information on educational direction is not included. The first category 0 "Pre-primary education" has also been changed to "Not completed primary (compulsory) education".

As a supplement to this rather crude coding frame it was decided that the participating countries should also have the opportunity to include the country specific variable(s) which were bridged into the ESS coding frame. Documentation of the bridging into the common coding frame was a requirement. Hence the choice of the ESS for the coding of education was both a country specific non-harmonised variable and an output harmonisation variable.

Table 3 Education, ESS

Construct	Education (highest level of education)
ESS Questions	• Country specific question(s)
Standard/coding frame	• Country specific coding frames + • ESS coding frame (modified ISCED 1997) 0 Not completed primary (compulsory) education 1 Primary or first stage of basic 2 Lower secondary or second stage of basic 3 Upper secondary 4 Post secondary, non-tertiary 5 First stage of tertiary 6 Second stage of tertiary
Harmonisation, comments	• A case of both no-harmonisation (including the country specific variables in the data files) and output harmonisation (re-coding into an ESS specific coding frame for educational level).
Problems/advantages	• Ensuring that the national answer categories are such that they best can be re-coded into the ESS common coding frame. • The advantage being both providing educational experts with the nation specific as well as having a common standard re-coded by the national teams. • Requires thorough documentation of the national educational system and how the country specific variables is bridged into the ESS coding frame.

2 Case: Output Harmonisation of Education Level in the ESS

In this last section we will present some findings indicating how a common coding frame for education taps the construct, compared to the country-specific variables. The first observation is that when output harmonisation results in a higher level of aggregation of sub-groups (because a large number of country-specific categories have to be collapsed into more general concepts) important characteristics of the data might be lost. The second observation is that national teams don't necessarily have a shared understanding of the product (common frame) variable, even when the categories of the product variable are well defined.

Table 4 Bivariate Analysis of Dependent Variable "Attitudes towards Immigration" Index and Education Levels (Regressors). Reference Group: Primary or First Stage of Basic Education. Parameters Estimates of ESS Coding frame Categories (Netherlands)

	DF	Parameter estimates	Standard error	t value	Pr > |t|	N
Intercept	1	16.86802	0.37977	44.32	<.0001	197
0. Not completed primary education	1	0.27484	1.47435	0.25	0.8521	14
2. Lower secondary or second stage of basic	1	*0.48850*	*0.43059*	*1.34*	*0.2567*	*690*
3. Upper secondary	1	2.03294	0.43545	4.88	<.0001	626
4. Post secondary, non-tertiary	1	2.97256	0.59171	5.18	<.0001	138
5. First stage of tertiary	1	3.49401	0.44702	8.03	<.0001	511
6. Second stage of tertiary	1	3.57642	1.81692	2.01	0.0491	9

Aggregation

Tables 4 and 5 below show the result of bivariate regression where an index of attitudes towards immigration is the dependent variable and education levels are regressors. The index is an additive scale of four variables from the following questions in the ESS 2002/2003 data file, and we have used data from the Netherlands as example:

D25 Using this card, would you say that people who come to live here generally take jobs away from workers in [country], or generally help to create new jobs?

D28 And, using this card, would you say that [country]'s cultural life is generally undermined or enriched by people coming to live here from other countries?

D29 Is [country] made a worse or a better place to live by people coming to live here from other countries? Please use this card.

D30 Are [country]'s crime problems made worse or better by people coming to live here from other countries? Please use this card.

All questions have an eleven-point scale, where 0 indicates negative consequences of immigration, 10 positive consequences. The scale has proved to have high validity across countries (Billiet, 2003).

From a data-explorative point of view, one obvious result in Table 4 is the low significance (t=1.34, N=690) of the parameter estimate of the sub-group 2. "Lower secondary or second stage of basic". The result might indicate that the group is very heterogeneous with respect to attitudes toward immigration, compared to other groups.

Table 5 Bivariate Analysis of Dependent Variable "Attitudes towards Immigration" Index and Education Levels (Regressors). Reference Group: Primary or First Stage of Basic Education. Parameters Estimates of Country Specific Categories (The Netherlands)

	DF	Parameter estimates	Standard error	t value	Pr > |t|	N
Intercept	1	16.86802	0.37895	44.51	<.0001	197
Not completed primary school	1	0.27484	1.47115	0.19	0.8518	14
Lower secondary school, technical (lbo)	1	*0.15228*	*0.46411*	*0.33*	*0.7429*	*394*
Lower secondary school, theoretical (mulo,mavo)	1	*0.93603*	*0.48905*	*1.91*	*0.0558*	*296*
Short upper sec. professional (kmbo, vhbo)	1	0.72657	0.95299	0.76	0.4459	37
Upper secondary professional education (mbo)	1	1.69289	0.46411	3.65	0.0003	394
Higher secondary school (mms, havo)	1	2.97256	0.59042	5.03	<.0001	138
Pre-scientific secondary school (hbs, vwo)	1	3.05751	0.66675	4.59	<.0001	94
Post secondary, non-tertiary education (mbo plus)	1	2.88445	0.65092	4.43	<.0001	101
Tertiary professional education (hbo)	1	3.28987	0.47113	6.98	<.0001	361
Tertiary scientific education, university	1	3.93043	0.60241	6.52	<.0001	129
Tertiary post-scientific education (teachers, doctors)	1	4.32246	1.22095	3.54	0.0004	21
Second stage of tertiary education, Ph.D. education	1	3.57642	1.81297	1.97	0.0487	9

The same analysis using the country-specific education variable unfolds that the harmonised education variable covers up significant differences in the "Lower secondary or second stage of basic" category (Table 5). The group with theoretical education from the lower secondary level seems to score much higher (more positive attitudes) on the immigration scale than people with technical education, a result that might suggest the importance of for example occupation and life career in forming attitudes towards immigration. This is an example of how important it is to carefully consider the need for country-specific variables in addition to a common coding frame.

2.2 Reliability of bridging

Successful output harmonisation depends on reliable bridging of the country-specific measurements into the common coding frame. As described in section 1.4, the ESS coding frame for education is a slightly modified version of UNESCO's ISCED-1997 classification. In the ESS Round 1, UNESCO's Operational Manual (UNESCO, 1999) was made available to the national teams together with the coding frame to ensure a *shared understanding* of how to apply the ISCED to the their national data.

Looking at Table 6 on page 177, we observe that the three countries we have used as examples have bridged their country-specific education variables in different ways. Some

of the differences might reflect the educational systems, for example the length of primary or compulsory education. A general "problem" in harmonising education in the ESS countries seems to be to draw comparable borders between the primary and secondary levels. Table 6 also documents large differences in the educational system and/or coding practices with regard to the ESS category 4, "Post secondary, non-tertiary".

However, the coding of the ESS categories 5 and 6 obviously reflects different understandings of the product variable. The UNESCO's Operational Manual is quite clear in its distinction between the two categories:

ISCED level 5 – First stage of tertiary education (not leading directly to an advanced research qualification):

"Qualifications acquired at the end – The programmes at Level 5 do not lead directly to an advanced research degree (which is actually an ISCED level 6 qualification), but to other degrees or diplomas which may or may not have a research component. In most countries, some programmes at Level 5 lead to a first university degree (a Bachelor's degree or its equivalent), and others lead to a second more advanced degree (a Master's degree or its equivalent). Both of these are to be classified at Level 5. In some countries, there is only one long-duration programme that leads to a degree that is equivalent to the combined Bachelor's and Master's degree programmes in other countries." (UNESCO, 1999: 31).

ISCED Level 6 – Second stage of Tertiary Education (leading to an Advanced Research Qualification):

"Destination of the Graduates – Those who successfully complete the programmes of Level 6 are generally eligible for faculty positions in universities and other institutions offering ISCED 5A programmes, as well as for research posts in government, industry, and other organisations employing researchers." (UNESCO, 1999: 37).

The main criterion for level 6 is that it is reserved for programmes that lead directly to an advanced research qualification. This criterion might very well be ambiguous in some educational systems, but when taking the cited main feature for level 5 into consideration, it seems clear that only degrees above a "Bachelor's degree or its equivalent" or a "Master's degree or its equivalent" should be coded into category 6 in the ESS coding frame.

While a majority of the ESS countries have coded only the Ph.D. degree (or its equivalent) into category 6, the bridges documented in Table 6 are all examples of the inclusion of lower degrees. In Belgium it is possible to move groups from category 6 to 5, while the country-specific variables of Israel and Sweden do not fully distinguish between levels

corresponding to Bachelor, Master and Ph.D. It is therefore not possible to bridge these country-specific variables into the common coding frame.

As mentioned in section 1.4, educational systems differ markedly across countries, and education is certainly one of the most difficult measures to harmonise in cross-national surveys. The more ambitious coding schemes like CASMIN and ISCED are certainly powerful tools for measuring and coding education, making us able to code education at a detailed and comparable level. However, detail has to be balanced against several other considerations. Firstly, collecting very detailed information on education would occupy a large amount of interviewing time, expelling other questions. Secondly, the more detailed the information and coding is, the less significant will the sample size of each category be. And thirdly, most users of the data would not like to face the burden of organising the detailed information into more comprehensible patterns.

In our view, the ESS has been successful in defining its set of comparable background variables and coding frames by giving ample opportunity to capture national variations by use of country-specific coding and variables, and at the same facilitating cross-national comparison by use of standards and standardised variables. Rather than using resources in searching or developing new standards, we believe that the largest potential for improving the background variables in the ESS can be found in better working procedures. Still with education as an example, the quality of measurement would be greatly improved by better training of interviewers and/or keying personnel in their country's educational system, and as the example in Table 6 clearly indicates, a centrally coordinated review of the national input instruments and the national bridging into the common ESS coding frames would have to be considered.

Table 6 Bridging of Country Specific Education Categories to ESS Coding Frame. Israel, Belgium and Sweden

ESS coding frame	Israel	%	ESS %	Belgium	%	ESS %	Sweden	%	ESS %
0. Not completed primary education	No formal qualification	1.9	1.9	Niet voltooid lager onderwijs	1.6	1.6	Not finished elementary school	1.3	1.3
1. Primary or first stage of basic	Lowest formal qualification	8.4	8.4	Lager onderwijs, basisschool	13.5	13.5	Elementary school, old Elementary school	15.4 11.7	27.1
2. Lower secondary or second stage of basic	Not finish vocational high school Not finish general high school	6.1 7.5	13.6	Lager beroepsonderwijs Lager technisch onderwijs Lager algemeen secundair onderwijs	10.4 0.0 9.5	19.9	Lower secondary and elementary school, old Vocational school 1963-1970 2 year high school	3.8 2.2 13.5	19.5
3. Upper secondary	Full voc hs without matriculation certificate Full voc hs with matriculation certificate Full general hs without matriculation certificate Full general hs with matriculation certificate Yeshiva hs without full matriculation certificate Yeshiva hs with full matriculation certificate	7.2 6.0 6.3 11.8 0.5 0.9	32.7	Hoger secundair beroepsonderwijs Hoger technisch onderwijs Hoger algemeen secundair onderwijs	10.4 13.5 13.5	37.4	3-4 year high school prior 1995 Vocational high school after 1992 Theoretical high school after 1992	13.5 4.9 3.2	21.6
4. Post secondary, non-tertiary	Post secondary	11.5	11.5	Hoger onderwijs van het korte type	14.0	14.0			
5. First stage of tertiary	Not finish University degree University Ba degree completed	8.1 14.6	22.7				University, no exam University, exam less than 3 years	8.6 6.0	14.6
6. Second stage of tertiary	University Ma /Phd degree completed	9.2	9.2	Hoger honderwijs van het lange type Universiteit Doctoraat	4.2 7.7 1.7	13.6	University, exam more than 3 years	16.1	16.1

3 Conclusion

Background variables "allow us to define contexts in which respondents' opinions, attitudes and behaviour are socio-economically embedded" (Braun & Mohler, 2002: 112). The measurement of background variables and definitions of homogenous sub-groups in mono-cultural or national surveys is based on knowledge of national concepts, rules and structures, and in cross-national surveys these cultural-specific measurements have to be harmonised into equivalent measures (Hoffmeyer-Zlotnik & Wolf, 2003).

The central funding and the organisational structure has given the ESS a unique opportunity to develop such a set of equivalent measures, mainly based on input harmonisation and internationally accredited standards. In Round 1 of the ESS, the project has achieved a lot in balancing a high level of comparability while at the same time being appropriately sensitive and responsive to cultural differences. The ESS will also provide a basis for further improvements in the harmonisation of cross-national measures, as feedback from researchers from all over the world will give us knowledge about how the measures have worked.

In the planning years of the ESS the experiences from on-going cross-national surveys like the ISSP were important knowledge bases for considerations and decisions made by the Steering and Methodology Committees (see page 164). When the ESS now has become reality, other international survey projects have the opportunity to utilise the ESS experience in their efforts of improving their background variables.

The background variables in the ESS have been planned in a most meticulous way, but the harmonisation of measurement and coding might still be improved. One example is the measurement of occupation (see page 169), where countries (or their fielding institutes) have long traditions in either using their own standard for occupation, their own variant of the ISCO-88 standard or ISCO-88 ILO rather than ISCO-88 (com). The different approaches to the coding can all yield different kind of errors, none of which might be detectable for the ESS Archive or the data users after the coding is done. The other example is education, where more attention to the country-specific variables as well as the bridging into the coding frame is needed.

Securing that harmonisation results in functional equivalent measures, i.e. they reflect the same phenomenon or dimension is therefore a two-way process:

1. Nationally diverse perspectives have to be taken into account in defining the resulting constructs.
2. National measurements on their side must be adapted to the common coding frames to ensure complete coverage of the constructs.
3. National teams must have a shared understanding of the product of the harmonisation.
4. Centrally co-ordinated assessment of country-specific instruments and bridging before national questionnaires are finalised and signed off to ensure that requirements 1-3 are met.

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Appendix

Demographic and Socio-Economic Variables in the ESS

C9	RLGBLG	"BELONGING TO PARTICULAR RELIGION OR DENOMINATION"
C10	RLGDNM	"RELIGION OR DENOMINATION BELONGING TO AT PRESENT"
C18	CTZCNTR	"CITIZEN OF COUNTRY"
C19	CTZSHIP	"CITIZENSHIP"
C20	BRNCNTR	"BORN IN COUNTRY"
C21	CNTBRTH	"COUNTRY OF BIRTH"
C23	LNGHOMA	"LANGUAGE MOST OFTEN SPOKEN AT HOME: FIRST MENTIONED"
	LNGHOMB	"LANGUAGE MOST OFTEN SPOKEN AT HOME: SECOND MENTIONED"
F1	HHMMB	"NUMBER OF PEOPLE LIVING REGULARLY AS MEMBER OF HOUSEHOLD"
F2	GNDR	"GENDER"
	GNDR2	"GENDER OF SECOND PERSON IN HOUSEHOLD"
	.	
	.	
	.	
	GNDRN	"GENDER OF N'TH PERSON IN HOUSEHOLD"
F3	YRBRN	"YEAR OF BIRTH"
	YRBRN2	"YEAR OF BIRTH OF SECOND PERSON IN HOUSEHOLD"
	.	
	.	
	.	
	YRBRNN	"YEAR OF BIRTH OF N'TH PERSON IN HOUSEHOLD"
F4	RSHIP2	"SECOND PERSON IN HOUSEHOLD: RELATIONSHIP TO RESPONDENT"
	.	
	.	
	.	
	RSHIPN	"N'TH PERSON IN HOUSEHOLD: RELATIONSHIP TO RESPONDENT"
F5	DOMICIL	"DOMICILE, RESPONDENT'S DESCRIPTION"
F6	EDULVL	"HIGHEST LEVEL OF EDUCATION"
	EDLVAT	"HIGHEST LEVEL OF EDUCATION, AUSTRIA"
	EDLVBE	"HIGHEST LEVEL OF EDUCATION, BELGIUM"
	EDLVCH	"HIGHEST LEVEL OF EDUCATION, SWITZERLAND"
	EDLVCZ	"HIGHEST LEVEL OF EDUCATION, CZECH REPUBLIC"
	EDLVDK	"HIGHEST LEVEL OF EDUCATION, DENMARK"
	EDLVES	"HIGHEST LEVEL OF EDUCATION, SPAIN"
	EDLVFR	"HIGHEST LEVEL OF EDUCATION, FRANCE"
	EDLVGB	"HIGHEST LEVEL OF EDUCATION, UNITED KINGDOM"
	EDLVGR	"HIGHEST LEVEL OF EDUCATION, GREECE"
	EDLVHU	"HIGHEST LEVEL OF EDUCATION, HUNGARY"
	EDLVIE	"HIGHEST LEVEL OF EDUCATION, IRELAND"
	EDLVIL	"HIGHEST LEVEL OF EDUCATION, ISRAEL"
	EDLVIT	"HIGHEST LEVEL OF EDUCATION, ITALY"
	EDLVLU	"HIGHEST LEVEL OF EDUCATION, LUXEMBOURG"
	EDLVNL	"HIGHEST LEVEL OF EDUCATION, NETHERLANDS"
	EDLVNO	"HIGHEST LEVEL OF EDUCATION, NORWAY"
	EDLVPL	"HIGHEST LEVEL OF EDUCATION, POLAND"
	EDLVPT	"HIGHEST LEVEL OF EDUCATION, PORTUGAL"
	EDLVSE	"HIGHEST LEVEL OF EDUCATION, SWEDEN"
F7	EDUYRS	"YEARS OF FULL-TIME EDUCATION COMPLETED"
F8a	PDWRK	"DOING LAST 7 DAYS: PAID WORK"
	EDCTN	"DOING LAST 7 DAYS: EDUCATION"
	UEMPLA	"DOING LAST 7 DAYS: UNEMPLOYED, ACTIVELY LOOKING FOR JOB"
	UEMPLI	"DOING LAST 7 DAYS: UNEMPLOYED, NOT ACTIVELY LOOKING FOR JOB"

Appendix (continued)

	DSBLD	"DOING LAST 7 DAYS: PERMANENTLY SICK OR DISABLED"
	RTRD	"DOING LAST 7 DAYS: RETIRED"
	CMSRV	"DOING LAST 7 DAYS: COMMUNITY OR MILITARY SERVICE"
	HSWRK	"DOING LAST 7 DAYS: HOUSEWORK, LOOKING AFTER CHILDREN, OTHERS"
	DNGOTH	"DOING LAST 7 DAYS: OTHER"
	DNGDK	"DOING LAST 7 DAYS: DON'T KNOW"
	DNGREF	"DOING LAST 7 DAYS: REFUSAL"
	DNGNA	"DOING LAST 7 DAYS: NO ANSWER"
F8b	MAINACT	"MAIN ACTIVITY LAST 7 DAYS"
F9	CRPDWK	"CONTROL PAID WORK LAST 7 DAYS"
F10	PDJOBEV	"EVER HAD A PAID JOB"
F11	PDJOBYR	"YEAR LAST IN PAID JOB"
F12	EMPLREL	"EMPLOYMENT RELATION"
F13	EMPLNO	"NUMBER OF EMPLOYEES RESPONDENT HAS"
F14	WRKCTR	"EMPLOYMENT CONTRACT UNLIMITED OR LIMITED DURATION"
	WRKCTRHU	"EMPLOYMENT CONTRACT UNLIMITED OR LIMITED DURATION, HUNGARY"
F15	ESTSZ	"ESTABLISHMENT SIZE"
F16	JBSPV	"RESPONSIBLE FOR SUPERVISING OTHER EMPLOYEES"
F17	NJBSPV	"NUMBER OF PEOPLE RESPONSIBLE FOR IN JOB"
F18	ORGWRK	"TO WHAT EXTENT ORGANISE OWN WORK"
F19	WKHCT	"TOTAL CONTRACTED HOURS PER WEEK IN MAIN JOB OVERTIME EXCLUDED"
F20	WKHTOT	"TOTAL HOURS NORMALLY WORKED PER WEEK IN MAIN JOB OVERTIME INCLUDED"
F21-F23	ISCOCO	"OCCUPATION, ISCO88 (COM)"
F24	NACER1	"INDUSTRY, NACE REV.1"
F25	UEMP3M	"EVER UNEMPLOYED AND SEEKING WORK FOR A PERIOD MORE THAN THREE MONTHS"
F26	UEMP12M	"ANY PERIOD OF UNEMPLOYMENT AND WORK SEEKING LASTED 12 MONTHS OR MORE"
F27	UEMP5YR	"ANY PERIOD OF UNEMPLOYMENT AND WORK SEEKING WITHIN LAST 5 YEARS"
F28	MBTRU	"MEMBER OF TRADE UNION OR SIMILAR ORGANISATION"
F29	HINCSRC	"MAIN SOURCE OF HOUSEHOLD INCOME"
F30	HINCTNT	"HOUSEHOLD'S TOTAL NET INCOME, ALL SOURCES"
F31	HINCFEL	"FEELING ABOUT HOUSEHOLD'S INCOME NOWADAYS "
F32	BRWMNY	"BORROW MONEY TO MAKE ENDS MEET, DIFFICULT OR EASY"
F33	PARTNER	"LIVES WITH HUSBAND/WIFE/PARTNER AT F4"
F34	EDULVLP	"PARTNER'S HIGHEST LEVEL OF EDUCATION"
F35a	PDWRKP	"PARTNER DOING LAST 7 DAYS: PAID WORK"
	EDCTNP	"PARTNER DOING LAST 7 DAYS: EDUCATION"
	UEMPLAP	"PARTNER DOING LAST 7 DAYS: UNEMPLOYED, ACTIVELY LOOKING FOR JOB"
	UEMPLIP	"PARTNER DOING LAST 7 DAYS: UNEMPLOYED, NOT ACTIVELY LOOKING FOR JOB"
	DSBLDP	"PARTNER DOING LAST 7 DAYS: PERMANENTLY SICK OR DISABLED"
	RTRDP	"PARTNER DOING LAST 7 DAYS: RETIRED"
	CMSRVP	"PARTNER DOING LAST 7 DAYS: COMMUNITY OR MILITARY SERVICE"
	HSWRKP	"PARTNER DOING LAST 7 DAYS: HOUSEWORK, LOOKING AFTER CHILDREN, OTHERS"
	DNGOTHP	"PARTNER DOING LAST 7 DAYS: OTHER"
	DNGDKP	"PARTNER DOING LAST 7 DAYS: DON'T KNOW"
	DNGNAPP	"PARTNER DOING LAST 7 DAYS: NOT APPLICABLE"
	DNGREFP	"PARTNER DOING LAST 7 DAYS: REFUSAL"
	DNGNAP	"PARTNER DOING LAST 7 DAYS: NO ANSWER"

Appendix (concluded)

F35b	MNACTP	"PARTNER'S MAIN ACTIVITY LAST 7 DAYS"
F36	CRPDWKP	"PARTNER, CONTROL PAID WORK LAST 7 DAYS"
F37-F39	ISCOCOP	"OCCUPATION PARTNER, ISCO88 (COM)"
F40	EMPRELP	"PARTNER'S EMPLOYMENT RELATION"
F41	EMPLNOP	"NUMBER OF EMPLOYEES PARTNER HAS"
F42	JBSPVP	"PARTNER RESPONSIBLE FOR SUPERVISING OTHER EMPLOYEES"
F43	NJBSPVP	"NUMBER OF PEOPLE PARTNER RESPONSIBLE FOR IN JOB"
F44	WKHTOTP	"HOURS NORMALLY WORKED A WEEK IN MAIN JOB OVERTIME INCLUDED, PARTNER"
F45	EDULVLF	"FATHER'S HIGHEST LEVEL OF EDUCATION"
F46	EMPRF14	"FATHER'S EMPLOYMENT STATUS WHEN RESPONDENT 14"
F47	EMPLNOF	"NUMBER OF EMPLOYEES FATHER HAD"
F48	JBSPVF	"FATHER RESPONSIBLE FOR SUPERVISING OTHER EMPLOYEES"
F50	OCCF14	"FATHER'S OCCUPATION WHEN RESPONDENT 14"
	OCCF14IE	"FATHER'S OCCUPATION WHEN RESPONDENT 14, IRELAND"
F51	EDULVLM	"MOTHER'S HIGHEST LEVEL OF EDUCATION"
F52	EMPRM14	"MOTHER'S EMPLOYMENT STATUS WHEN RESPONDENT 14"
F53	EMPLNOM	"NUMBER OF EMPLOYEES MOTHER HAD"
F54	JBSPVM	"MOTHER RESPONSIBLE FOR SUPERVISING OTHER EMPLOYEES"
F56	OCCM14	"MOTHER'S OCCUPATION WHEN RESPONDENT 14"
	OCCM14IE	"MOTHER'S OCCUPATION WHEN RESPONDENT 14, IRELAND"
F57	ATNCRSE	"IMPROVE KNOWLEDGE/SKILLS: COURSE/LECTURE/CONFERENCE, LAST 12 MONTHS"
F58	MARITAL	"LEGAL MARITAL STATUS"
F59	LVGHW	"CURRENTLY LIVING WITH HUSBAND/WIFE"
F60	LVGOPTN	"CURRENTLY LIVING WITH ANOTHER PARTNER THAN HUSBAND/WIFE"
F61	LVGPTN	"CURRENTLY LIVING WITH PARTNER"
F62	LVGPTNE	"EVER LIVED WITH A PARTNER WITHOUT BEING MARRIED"
F63	DVRCDEV	"EVER BEEN DIVORCED"
F64	CHLDHM	"CHILDREN LIVING AT HOME OR NOT"
F65	CHLDHHE	"EVER HAD CHILDREN LIVING IN HOUSEHOLD"

Source: Appendix, ESS Data Documentation Report, available form *http://ess.nsd.uib.no/:* ESS Round 1 – Survey documentation.